

Plan of Advanced Satellite Communications Experiment Using ETS-VI

Tadashi Shiomi
Space Systems Section, Space Communications Division
Communications Research Laboratory
Ministry of Posts and Telecommunications

4-2-1 Nukuikita-Machi, Koganei-Shi, Tokyo 184, Japan

Phone : 0423-21-1211

Telefax: 0423-24-8966

Communications Research Laboratory (CRL, Ministry of Posts and Telecommunications, Japan) has been engaged in development of three advanced satellite communication payloads aiming at experiments by Japan's 2-ton class Engineering Test Satellite VI (ETS-VI) which is to be launched in H-II rocket by NASDA in August 1992.

CRL's three experimental systems are:

(1) S-band inter-satellite communications

CRL develops S-band multiple access data relay and tracking system with 19-elements phased array antenna in cooperation with NASDA. Data relay and tracking experiments between ETS-VI and low altitude earth orbiting satellites such as ADEOS (Advanced Earth Observing Satellite to be launched by NASDA in 1993) are planned. A user satellite simulator on the ground will also be used for fundamental and applied experiments. The system has capability of data relay at less than several Mbps, and is designed to keep inter-operability with SMA(S-band Multiple Access) system of NASA TDRSS.

(2) Millimeter-wave inter-satellite and personal-satellite communications

CRL develops millimeter-wave (43/38 GHz) transponder to use high frequency bands in satellite communications on the basis of research through ETS-II(1977) and Japan's ECS(1979) projects. The objective of the millimeter-wave mission is twofold. The first is to develop high data

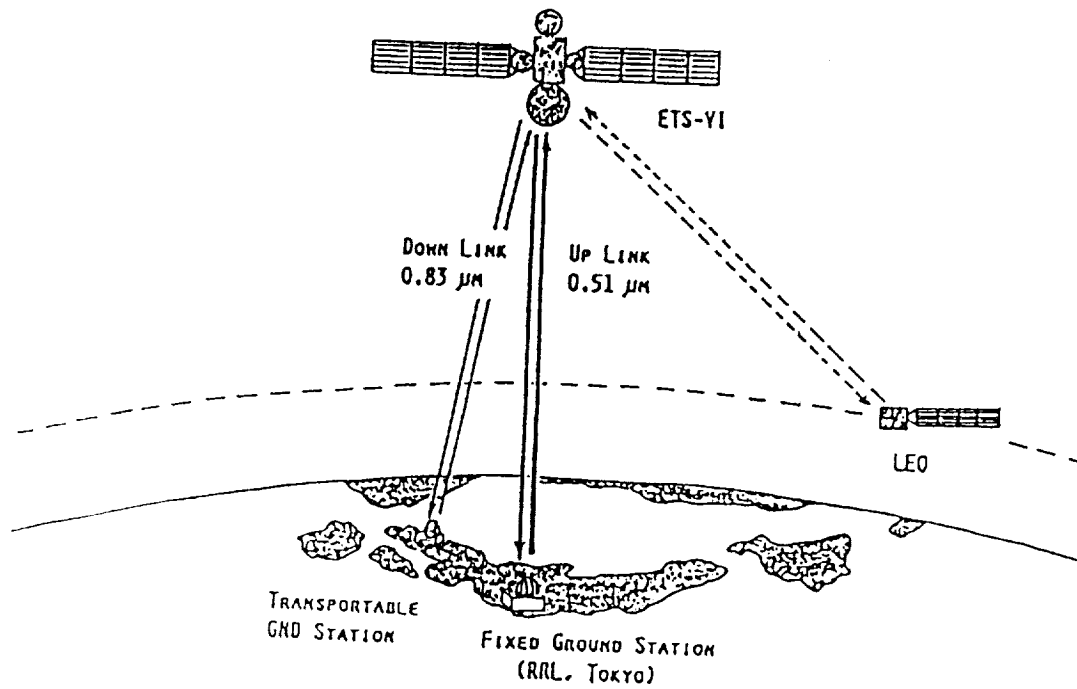


Fig.4 Optical Satellite Communication